terior roots shows that a single posterior root contains fibers belonging to different embryonal systems, and that the embryonal systems are composed of posterior root fibers. As the degeneration of incipient tabes corresponds with embryonal zones, it follows that in tabes the posterior roots do not degenerate in toto, but that certain fibers of each affected root degenerate, and that these affected fibers correspond to the fetal fiber systems.

Schaffer believes that the ventral fields of the posterior columns contain exogenous as well as endogenous fibers, and that the same is probably true of Gombault and Philippe's triangular zone. Tabes is a systemic disease of the posterior columns, and this posterior column affection is secondary to degeneration of the posterior roots. The degeneration of tabes is systemic and segmental; i. e., it follows the embryonic divisions of the posterior columns, and is in the intramedullary distribution of each altered root.

Schaffer has shown elsewhere that the spinal ganglion cells are not altered in tabes, even when they are studied by the method of Nissl, and this fact he regards as a proof that the primary lesion of tabes is not in the cells of the spinal ganglia. The degeneration of the posterior roots in tabes may not always be elective, but a root may degenerate in toto, and most frequently both forms of degeneration are found in the same case. Infiltrative and vascular lesions of the posterior roots, producing nutritive and circulatory disturbances, play an important role in the causation of tabes; but a primary degeneration of the posterior roots may also occur. The intraspinal portion of the posterior root is more vulnerable than the extraspinal, and the degeneration begins in the former portion. The point of contraction in the posterior root (Obersteiner and Redlich's *locus minoris resistentiae*) is not always the part surrounded by the pia. It does not follow that a posterior root degenerates in toto, because it has been injured at a certain point. Schaffer has shown that the different tracts of the spinal cord degenerate at different periods, when the cord has been cut transversely; and it is probable that an entire posterior root may be exposed to injurious agents, and yet only certain fibers belonging to definite tracts may degenerate, or at least, degenerate within a certain time. In this way the tabetic degeneration may conform to the embryonal systems of the posterior columns, even though the whole of the posterior root may be exposed to injury. SPILLER.

68. BEITRAG ZUR KENTNISS DER ,,SECUNDÄR MALIGNEN NEUROME.“ (Contribution to the Knowledge of Secondary Malignant Neuroma). Habermann, (Münchener Medicinische Wochenschrift, 23 and 24, 1898).

Multiple neuromata seem to bear a close relationship to multiple fibromata of the skin. Their development produces the clinical picture of a rare disease, "neurofibromatosis" or "elephantiasis nervosum," which is apparently always congenital in origin. These neurofibromata seem to have a special tendency to undergo sarcomatous degeneration, though they may exist for years without giving any symptoms before this begins. A distinction is to be drawn between secondary malignant neuromata, and primary sarcomata of nerves.

In the first, hereditary predisposition is usually made evident by the presence of multiple fibromata, and often of some defect or deformity. In primary sarcoma these elements are wanting. Primary sarcoma soon breaks through its capsule, and forms metastases. Secondary malignant neuroma grows rapidly, but generally remains enclosed in its capsule, and has little tendency to form metastases. The rarity of secondary malignant neuroma is shown by the fact that only twenty-two cases are recorded in literature.

To these the author adds a twenty-third, of whose history the following is a synopsis:

The patient, a thin, dwarfish woman of twenty-eight, had had since childhood, a dorsal scoliosis, and did not menstruate until twenty-four years old. Over her body she had a diffuse brownish pigmentation, with numerous nevi-like spots, and on arms, breast, abdomen, and left leg fibromata of different sizes and consistencies, some pigmented, others not. In the spring of 1893 she experienced pain of a severe and burning character in the right foot, and on the right buttock there developed a swelling of great sensitiveness. Upon examining her in November, 1893, the author found here a very painful tumor of the size of a duck's egg. This was connected with the sciatic nerve. This he removed, having to cut out a piece of the nerve, and to join the ends by a procedure analogous to the tendon-splitting of Hueter and Czerny.

The patient made a good recovery, with gradual return of sensation and motor power. The tumor proved to be a fibrosarcoma arising from the endoneurium, and contained a few nerve fibers.

The patient soon commenced to feel pain and weakness in the right arm, and in February, 1895, a small tumor connected with the ulnar nerve was removed with good result. This proved also to be a fibrosarcoma.

Nine monts later, after the same set of symptoms two small beginning fibrosarcomata were removed from the left occipital nerve. The patient next developed severe pain in the left hypogastric region, the sensitiveness and tension of the abdominal muscles being so great that no satisfactory exploration of the abdomen could be made. After lasting for four months, during which time morphine was constantly necessary, for some unexplained reason the pain suddenly diminished, and the patient was able to get about again. The trouble still progressed, however, and in November, 1896, there were extirpated the following tumors:

Two on the head (plexiform neuroma), one on the thorax, two on the buttocks, two on the thigh, one in the radial region. All were connected with nerves. The case has continued to progress in the same way, more tumors constantly developing, though by the use of morphine in small doses, the patient keeps about, and does a little housework. Some of the latterly extirpated tumors have proved to be pure neurofibromata. The miscroscopical report is given in full, and the subject in its pathological aspect is discussed at length. ALLEN.

69. UEBER VERÄNDERUNGEN DER SPINALGANGLIENZELLEN UND IHRER CENTRALEN FORTSÄTZE NACH DURCHSCHNEIDUNG DER ZUGEHÖRIGEN PERIPHEREN NERVEN (Concerning Changes in the Cells of the Spinal Ganglia and their Central Processes after Division of the Peripheral Nerves). R. Cassirer (Deutsche Zeitschrift für Nervenheilkunde, 14, 1898, p. 150).

Cassirer removed several centimeters of the sciatic nerve in sixteen rabbits, near the sciatic foramen, and examined, at various periods following the operation, the spinal ganglia belonging to these nerves. He distinguishes four types of normal cells in the spinal ganglia of rabbits. He believes with v. Lenhossék that a pericellular space does not exist when the technique has been perfect. He was able to observe pathological changes in the cells of the ganglia as early as five days after the operation. After about fifteen days the